REMARKS

Claims 1-20 are pending in this application. Support for new claims 3-20 is found at pages 4-8 of the present specification, as well as in the examples therein.

Submission of Certified Copy of Priority Document

Submitted simultaneously under separate cover with this Reply is the certified copy of the Priority Document for the present application. It is requested that this Priority Document be made of record in connection with this application in order to complete the requirements for claiming priority under 35 U.S.C. § 119.

Submission of Information Disclosure Statement

It is noted that an Information Disclosure Statement is being submitted simultaneously under separate cover with this Reply. It is requested that the Patent Examiner issue an appropriate initialed PTO-1449 form in response to this Information Disclosure Statement.

Issues under 35 U.S.C. § 112

Claim 2 has been rejected under 35 U.S.C. § 112 as allegedly being indefinite because of the term "substantially".

Recent U.S. case law establishes that "substantially" can be a part of the claim language if the term "serves reasonably to

describe subject matter so that its scope would be understood by persons in field of invention, and to distinguish the claimed subject matter from the prior art", and is "warranted by the nature of the invention, in order to accommodate minor variations that may be appropriate to secure the invention". *See Verve LLC v. Crane Cams Inc.*, 65 USPQ2d 1051, 1054 (Fed. Cir. 2002). In *Verve LLC*, the Federal Circuit found that the term "substantially" does not render the disputed patent claims invalid for indefiniteness, and remanded to the lower court. Consequently, it is requested that the above-noted rejection be withdrawn.

Issues under 35 U.S.C. § 102(b) and 103(a)

Claim 1 has been rejected under 35 U.S.C. § 102(b) as being anticipated by Poque '852 (USP 4,328,852).

Claims 1 and 2 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Ishizaka '641 (USP 5,706,641).

Claims 1 and 2 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Poque '852 in view of Umezawa '587 (USP 4,488,587).

All of the above-noted rejections are traversed for the following reasons.

Summary of Reasoning in Office Action

In the Office Action of January 29, 2003 it is stated as the essential basis for all of the above-note rejections that claims 1 and 2 are "product-by-process" claims, such that the recitation in the claims of the use of a core filament having a two-dimensional wave shape before being bundled and the twisting with the sheath while applying torsion used to form the metal cord is essentially ignored.

It is noted that if the wave shape and twisting while applying torsion features are acknowledged, it is very clear that the prior art fails to disclose or suggest these features.

Present Invention and Its Advantages

The present invention as recited in the present claims is directed to a metal cord which is formed using a waved filament with a two-dimensional wave shape (before being bundled) which is then twisted with a sheath while applying torsion in order to form a three-dimensional wave shape within the metal cord. It turns out that these processing conditions directly relate to the physical properties of the metal cord product recited in the present claims. Specifically, note the comparative test results summarized in Table 1 at page 11 of the present specification which show that Embodiments Nos. 1-3 (present invention) exhibit advantageously enhanced rubber permeability and fatigue resistance properties over

Comparative Embodiment Nos. 1-2. In this regard, note that Comparative Embodiment No. 1 employs a filament without a two-dimensional wave shape. It is clear from the more detailed discussion below that the prior art fails to disclose or suggest the employment of two-dimensional wave shaped filaments of the employment of subsequent twisting with torsion in order to obtain the metal cord product which exhibits these advantages.

It is further submitted that MPEP § 2113 clearly allows product-by-process claims which recite a product having a structure "implied by the [process] steps". The present situation clearly falls within the acceptable scope of MPEP § 2113,

> the structure implied by the process steps should be considered when assessing the patentability of product-by process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be exhibited to impart distinctive structural characteristics to the final product....*In re Garnero*, 162 USPQ 221, 223 (CCPA 1979).

Consequently, the claims of the present application are completely appropriate product-by-process claims which include processing features that clearly imply the structure of the obtained metal cord product, and the features recited in the present claims must be considered in determining patentability with respect to the prior art pursuant to MPEP § 2113.

Distinctions between Present Invention and Cited Prior Art Documents

All of the Poque '852, Umezawa '587 and Ishizaka '641 documents fail to disclose or suggest a metal cord formed from a filament having a two-dimensional wave shape before being bundled, as in the present invention. Thus, all of these cited prior art documents fail to recognize the advantages associated with the present invention with regard to advantageously improved rubber permeability and fatigue resistance properties as evidenced by the comparative test results summarized in Table 1 at page 11 of the present specification as discussed above. Consequently, significant patentable distinctions exist between the claims of the present application and all of the cited prior art documents such that the above-noted rejection should be withdrawn.

It is submitted for the reasons stated above that all of the present claims define patentable subject matter such that the present application should be placed into condition for allowance.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a two (2) month extension of time for filing a reply in connection with the present application, and the required fee of $410.00 is attached hereto.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully

requested to contact the applicants representative, Eugene T. Perez, #48,501, at the telephone number listed below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Attached hereto is a marked-up version of the changes made to the application by this Amendment.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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ADM/csm
0229-0675P

Attachment: Version with Markings to Show Changes Made

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The paragraph beginning on page 5, line 9 has been amended as follows:

On the contrary, a non-waved filament 6 formed in a substantially linear shape in a state before being bundled is used as the filament Fb of the ~~seethe~~ sheath 3.

IN THE CLAIMS:

The claims have been amended as follows:

1. (Amended) A metal cord for reinforcing a rubber article ~~formed~~ comprising:

a core formed of one filament; and

a sheath formed of 1 to 6 filaments arranged around the core,

wherein said filament of the core is formed of a waved filament waved in a two-dimensional wave shape having crest portions and trough portions in a repeated manner, in a state before being bundled, and is twisted with said sheath while applying the torsion so as to be formed in a three-dimensional wave shape within ~~a~~ said metal cord.

2. (Amended) The metal cord for reinforcing a rubber article

as claimed in claim 1, wherein a diameter d of said core filament is between 0.15 and 0.50 mm and substantially the same as that of the filament of said sheath.

Claims 3-20 have been added.